

**REMARKS**

**Summary of the Office Action**

In the Office Action dated January 8, 2004, the Examiner:

- objected to the drawings under MPEP § 608.02(g);
- objected to the specification: (i) according to the Examiner, the specification needs to be updated with information on related applications; (ii) according to the Examiner, the abstract does not meet the requirements of 37 C.F.R. § 1.72(b); (iii) according to the Examiner, the title of the invention is “neither precise nor descriptive” and a new title is required.
- objected to the claims 9-17 for, according to the Examiner, apparent misspellings of the word “axis”
- rejected claims 1-7 and 18-20 under the 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,418,098 to Yamamoto et al. (hereinafter “Yamamoto”);
- rejected claim 8 under 35 U.S.C. § 103(a) as being unpatenatable over Yamamoto in view of the “Official Notice” being taken that “both the concept and the advantages of providing integrated parts that fits contour are well known and expected in the art.” (hereinafter Official Notice).

Applicants appreciate the Examiner’s indication of allowable subject matter with respect to claims 9-17. Newly added claims 21-40 are presented for the Examiner’s review and consideration. Upon entry of this amendment, claims 1-20 have been canceled and newly added claims 21-40 are pending.

### In the Drawings

In the Detailed Action at page 2, the Examiner objected to the drawings. Specifically, the Examiner noted that FIGS. 1-5 are not designated by a legend such as “Prior Art,” and according to the Examiner, the “legend is necessary in order to clarify what applicant’s invention is.” (Detailed Action at 2) (citing MPEP § 608.02(g)). Submitted herewith are Replacement Drawing sheets in which Applicants have amended the drawings by adding the legend “Prior Art” to FIGS. 1-5. Applicants respectfully request removal of the objection and approval of the drawing amendments.

### In the Specification

According to the Examiner, the specification “needs to be updated with respect to information on related applications.” (Detailed Action at 3). Applicants respectfully assert that the specification of the instant application does not need to be updated with information on related applications for at least the following reasons. The Examiner cites to MPEP § 201.11 for the update requirement. (*Id.*) However, that section of the MPEP is directed to related applications under 35 U.S.C. §§ 120 and 119(e). The instant application does not claim priority to such types of applications. However, as correctly noted by the Examiner at page 2 of the Detailed Action, the current application does claim foreign priority to two Japanese applications under 35 U.S.C. § 119(a)-(d). In that regard, MPEP § 201.13 sets forth that “[a] priority claim can be made on filing . . . by including a copy of an unexecuted or executed oath or declaration specifying a foreign priority claim.” An executed declaration was filed on December 4, 2001 in this application including such a priority claim. Applicants assert that the requirement for

updating the specification with information concerning related applications has apparently been made in error and respectfully request that the objection be withdrawn.

The Examiner also objected to the disclosure because, according to the Examiner, the Abstract as filed did not meet the requirements of 37 C.F.R. § 1.72(b). The abstract has been amended so as not to exceed 150 words in length. Accordingly, Applicants respectfully request withdrawal of the objection to the Abstract.

The Examiner further objected to the specification because the title of the invention as filed is “neither precise nor descriptive.” A new title of the invention is presented for the Examiner’s review and consideration. Accordingly, Applicants respectfully request withdrawal of the requirement for a new title and the associated objection.

The specification has been further amended. Specifically, in the Object and Summary of the Invention section, paragraphs have been amended to reflect the newly added claims as supported by the application as filed and discussed in greater detail below.

### **In the Claims**

#### **Objections**

The Examiner objected to claims 9-17 for the apparent misspelling of the word “axis” as “axes.” The use of “axes,” in the claims 9-17 is understood to be the plural form of “axis” and is therefore correct. The use of “axes” is fully supported by the application as filed specifically by at least FIG. 8 and the text of the specification at page 21, line 27 to page 22, line 23.

#### **Rejections Under 35 U.S.C. §§ 102(e) and 103(a)**

Claims 1-7 and 18-20 stand rejected under 35 U.S.C. § 102(c) as being anticipated by Yamamoto. Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over

Yamamoto in view of the Official Notice. The Examiner is thanked for the indication that the subject matter of claims 9-17 is allowable. Claims 1-20 have been canceled without prejudice or disclaimer. Accordingly, the rejections under 35 U.S.C. §§ 102(e) and 103(a) have been rendered moot.

Newly added claims 21-40 are presented for the Examiner's review and consideration. No new matter is believed be presented as the newly added claims are supported by the application as originally filed. For example, newly added claim 22 is specifically supported by the application as filed at page 47, line 16 to page 48, line 19. To the extent the rejections under 35 U.S.C. §§ 102(e) and 103 may be reapplied to newly added claims 21-40, they are respectfully traversed as follows.

Applicants assert that Yamamoto does not anticipate each and every element of independent claim 21. Specifically, claim 21 recites an optical pickup device comprising, *inter alia*,

a focus error detecting optical element having four sections of first through fourth quadrants quadrisectioned around the center of an optical path of the return light along two division lines extending corresponding to a track extending direction and a direction perpendicular to the track extending direction respectively, the four sections disposed on a plane substantially perpendicular to the optical path of the return light,

wherein the four sections provide astigmatism for the return light passing through the sections contiguous to said division lines so that the astigmatism in directions are rotated by 90° from each other about the optical path, while separating the return light into at least four paths; and

a photodetector which has at least four spaced light receiving elements for receiving the separated return light each of which has contour lines corresponding to said division lines and is comprised of two light receiving areas divided by a bisect line extending substantially in parallel with one of the contour lines,

wherein said bisect line of said spaced light receiving element extends corresponding to the direction perpendicular to the track extending direction.

Independent claim 40 recites a focus error detecting method comprising, *inter alia*, the steps of:

using a focus error detecting optical element having four sections of first through fourth quadrants quadrisected around the center of an optical path of the return light along two division lines extending corresponding to a track extending direction and a direction perpendicular to the track extending direction respectively, the four sections disposed on a plane substantially perpendicular to the optical path of the return light, wherein the four sections provide astigmatism for the return light passing through the sections contiguous to said division lines so that the astigmatism in directions are rotated by 90° from each other about the optical path, while separating the return light into at least four paths; and

using a photodetector which has at least four spaced light receiving elements for receiving the separated return light each of which has contour lines corresponding to said division lines and is comprised of two light receiving areas divided by a bisect line extending substantially in parallel with one of the contour lines, wherein said bisect line of said spaced light receiving element extends corresponding to the direction perpendicular to the track extending direction.

Contrary to the Examiner's citation of Yamamoto at column 19, lines 16-55, (Detailed Action at 5) Yamamoto does not disclose, suggest or teach a focus error detecting optical element having four sections that provide astigmatism for the return light passing through the sections contiguous to the division lines so that the astigmatism in directions are rotated by 90° from each other about the optical path, while separating the return light into at least four paths. Instead, Yamamoto discloses a diffractive optical element 8 having four diffracting areas 8E, 8F, 8G, and 8H divided by line L1 extending in the track direction x and the dividing line L2 extending in the direction orthogonal to the track direction x. (See Yamamoto, 19:41-46, FIG. 16). It is understood that FIGS. 17A, 17B and 17C show spot diagrams showing changes in the *shape* of the light beam diffracted by the diffractive optical element 8. (See *id.*, 20:29-31). However, these figures do not teach or suggest 90° rotated spot images with astigmatism. Moreover, Applicants respectfully submit that Yamamoto merely suggests using the

conventional astigmatic method and does not provide a description of how to provide astigmatism for the diffracted light beams, as recited in the claims of the instant application.

In addition and contrary to the Examiner's citation of Yamamoto FIG. 16 (*See* Detailed Action at 5), Yamamoto does not disclose, suggest or teach a photodetector having at least four *spaced* light receiving elements for receiving the separated return light. In Applicants' application as filed, shown in FIGS. 13A-13E, particularly FIGS. 13C and 13E, the light receiving elements 31PD-34PD are spaced out to improve sensitivity of focusing. The 90° rotated spot images with astigmatism stray the light receiving elements off in defocusing states. In contrast, Yamamoto in FIG. 16 shows four bisected photo-detecting planes 31, 32, 33 and 34 arranged in a line in the track direction along the X-axis with few gaps, rather than spaced photo-detecting planes. (*See* Yamamoto, 20:6-9, FIG. 16). Moreover, Applicants respectfully submit that the arrangement of Yamamoto cannot provide any auxiliary light receiving elements for receiving the return light between the adjacent photo-detecting planes.

As recited in independent claims 21 and 40, each of the at least four light receiving elements of the photodetector has contour lines corresponding to the division lines of the focus error detecting optical element. Each light receiving element is comprised of two light receiving areas divided by a bisect line extending substantially in parallel with one of the contour lines. The bisect line extends corresponding to the direction perpendicular to the track extending direction of the optical recording medium. As noted above, these light receiving areas improve sensitivity of focusing as shown in FIGS. 13A-13E, and particularly shown in FIGS. 13B and 13D of the application as filed. The 90° rotated spot images with astigmatism cross over the bisect line to switch to the two light receiving areas in response to defocusing states. In contrast, the bisecting line to photo-detecting planes 31, 32, 33 and 34 of Yamamoto does not correspond

to the direction *perpendicular* to the track direction. Instead, Yamamoto in FIG. 16 shows the photo-detecting planes 31, 32, 33 and 34 split into respective two divided areas 31a, 31b, 32a, 32b, 33a, 33b, 34a and 34b by a bisect line extending in the track direction x, rather than a line perpendicular to the track direction x.

Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn because Yamamoto does not teach or suggest each feature of the newly added independent claims 21 and 40. As pointed out in MPEP § 2131, “[t]o anticipate a claim, the reference must teach every element of the claim.” Thus, “[a] claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Cal.*, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987).” Similarly, MPEP § 2143.03 instructs that “[t]o establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974).” Furthermore, Applicants respectfully assert that dependent claims 22-39 are allowable at least because of the dependence from independent claim 21 and the reasons set forth above.

**CONCLUSION**

In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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